

Appl. No. 10/773,570

PATENT

Amdt. dated August 8, 2005

Reply to Office Action of February 8, 2005

**Amendments to the Drawings:**

The concurrently submitted two sheets of replacement drawings include changes to Figs. 2, 3 and 4. These two sheets, which include Figs. 1-4, replace the earlier three sheets, including Figs. 1-4.

Attachment: Replacement Sheet of Formal Drawings  
Annotated Sheet Showing Changes

**REMARKS**

Claims 1-19 remain in this case for consideration. Claims 1 and 8 have been amended to improve grammar and claim 4 has been rewritten in independent form as suggested by the Examiner.

A. Interview Summary

Applicants would first like to thank Examiner Patel for taking the time to talk over the telephone with Applicants' undersigned attorney on July 5, 2005 about how Applicants' invention differs from the cited art, particularly Morejon's U.S. Patent No. 6,494,208 ("Morejon patent"). As explained in further detail below, Applicants' attorney pointed out during the interview that Morejon's cleaning apparatus relies upon scrubbing with a generally abrasive curved surface to remove mucus deposits. By contrast, Applicants' invention uses a squared polymeric edge to shave away mucus deposits. While not disputing Applicants' distinction, Examiner Patel indicated at the conclusion of the interview that she would need to study Applicants' arguments further.

B. Formal Matters

The inventors' declaration has been objected to because non-initialed and/or non-dated alterations have been made. To overcome this basis for objection, Applicants are submitting with this amendment a clean copy of their inventors' declaration without any non-initialed and/or non-dated alterations.

The drawings have been objected to because reference character 80 in Figure 4 is used to represent two different structural elements. To overcome this basis of objection, Applicants have submitted two sheets of replacement drawings where the distal end of the endotracheal tube has been renumbered as reference character 84 and the cleaning apparatus of the present invention is now shown to be inserted through the patient's mouth. Paragraph 24 of the specification has also been amended to reflect the reference number correction. Since the changes to the drawings and specification do not affect the subject matter of the claims, no new matter has been added.

With regard to Applicants' Abstract of Disclosure, Applicants have been reminded that it is important for the abstract not exceed 150 words. In view of this reminder, Applicants have submitted a shorter Abstract of Disclosure with this amendment.

C. Prior Art Rejections

1. The Invention

Applicants have invented an endotracheal tube cleaning apparatus which can be periodically inserted into the inside of an endotracheal tube to shave away mucus deposits. In a preferred embodiment, this cleaning apparatus comprises a flexible central tube with an inflatable balloon at its distal end. Affixed to the inflatable balloon are one or more shaving rings, each having a squared leading edge to shave away mucus accumulations. By shaving with a squared edge, rather than scrubbing with an abrasive surface, Applicants' invention effectively avoids aerosolizing bacterially infected mucus particles which could then work their way into the patient's lungs.

2. The Cited Art Distinguished

Applicants claims 1, 2, 3, 5, 7, 8, 9, 10-13 and 15-18 have been rejected under 35 U.S.C. § 102(b) as being anticipated by the Morejon patent. As described in paragraph 9 of Applicants' specification, the Morejon cleaning apparatus features an elongate tubular member with an resilient material bladder at its distal end. In operation, Morejon's tubular member is inserted inside of the endotracheal tube at which time Morejon's resilient material bladder is inflated. On the outside of Morejon's resilient material bladder, Morejon forms a generally abrasive surface from a rounded nylon mesh or a plurality of rounded ribs (see, Morejon patent, col. 7, lns. 45-46; col. 8, ln. 2; Figs. 3, 3A, 4). After the abrasive surface of Morejon's inflated bladder contacts the inside walls of the endotracheal tube, one uses a reciprocating movement to scrub off the mucus deposits (see, Morejon patent, col. 8, lns. 11-13).

Nonetheless, in the process of Morejon's abrasive scrubbing, bacterially infected mucus particles could aerosolize and work their way into the patient's lungs, with potentially catastrophic effect. Further, Morejon's abrasive scrubbing can damage any bactericidal films which are applied to the inner walls of the endotracheal tubes.

By contrast, Applicants avoid abrasive scrubbing in their invention by affixing shaving rings with a squared edge to their balloon. Rather than scrubbing with a dull, rounded edged ring, Applicants use a single pull of their squared edge ring to shave away mucus deposits. Because Applicants are shaving with their invention rather than scrubbing, Applicants avoid the problem of aerosolizing bacterially infected mucus particles which could work their way into the patient's lungs with potentially catastrophic effect. For these reasons, the Morejon patent does not anticipate any of Applicants' claims 1, 2, 3, 5, 7, 8, 9, 10-13 or 15-18.

Finally, Applicants' thank Examiner Patel for indicating that claims 4, 6, 8, 14 and 19 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Taking the Examiner's suggestion, claim 4 has been rewritten in independent form. Since claim 6 is dependent upon claim 4, claim 6 should now be in allowable form. Claims 8, 14 and 19 are already in independent form and, as such, need not be re-written.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (415) 576-0200.

Respectfully submitted,

  
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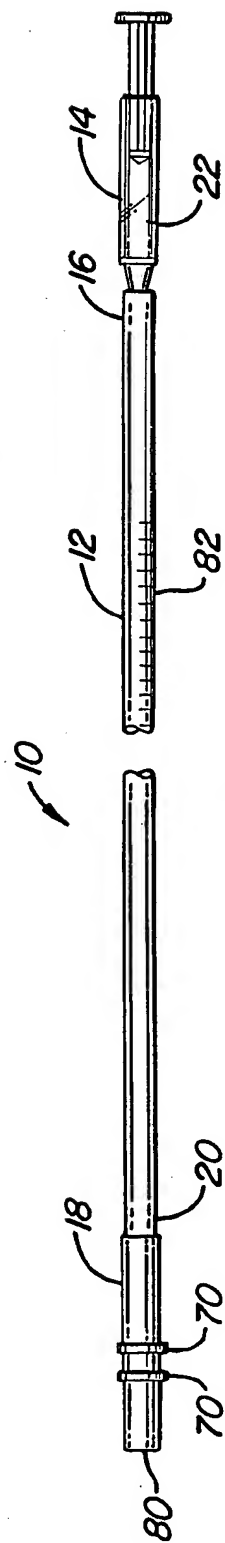


FIG. 1

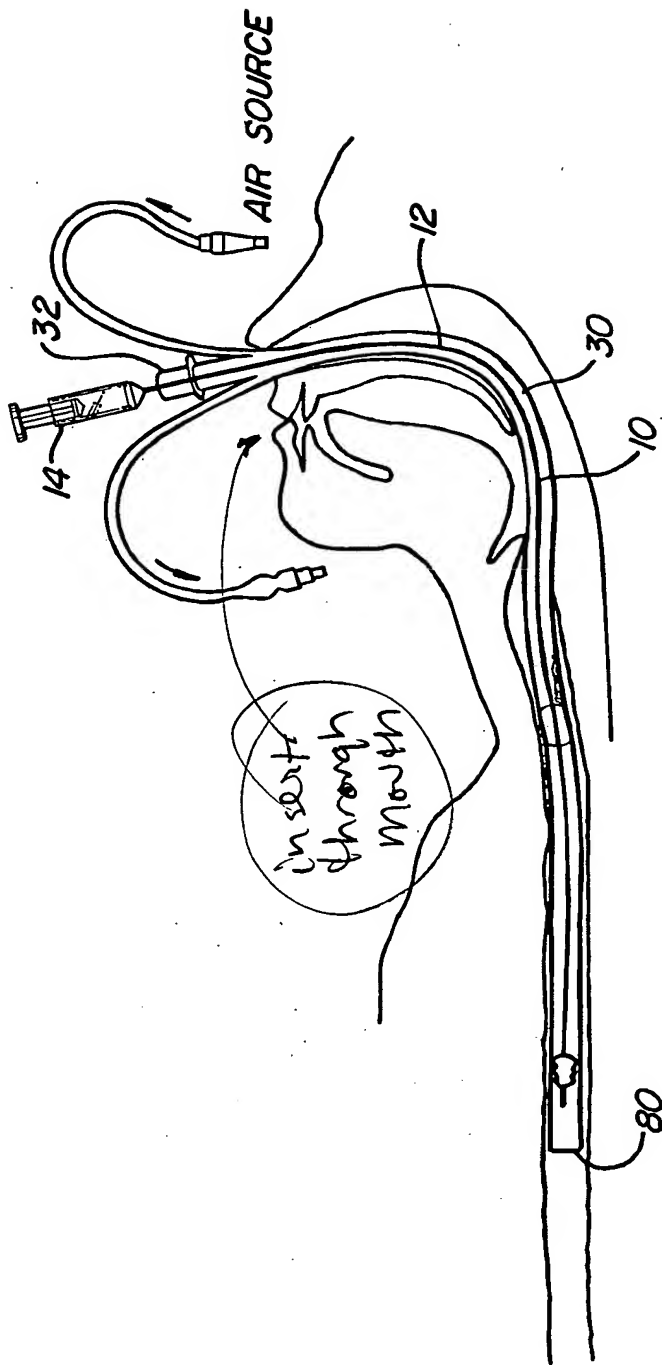
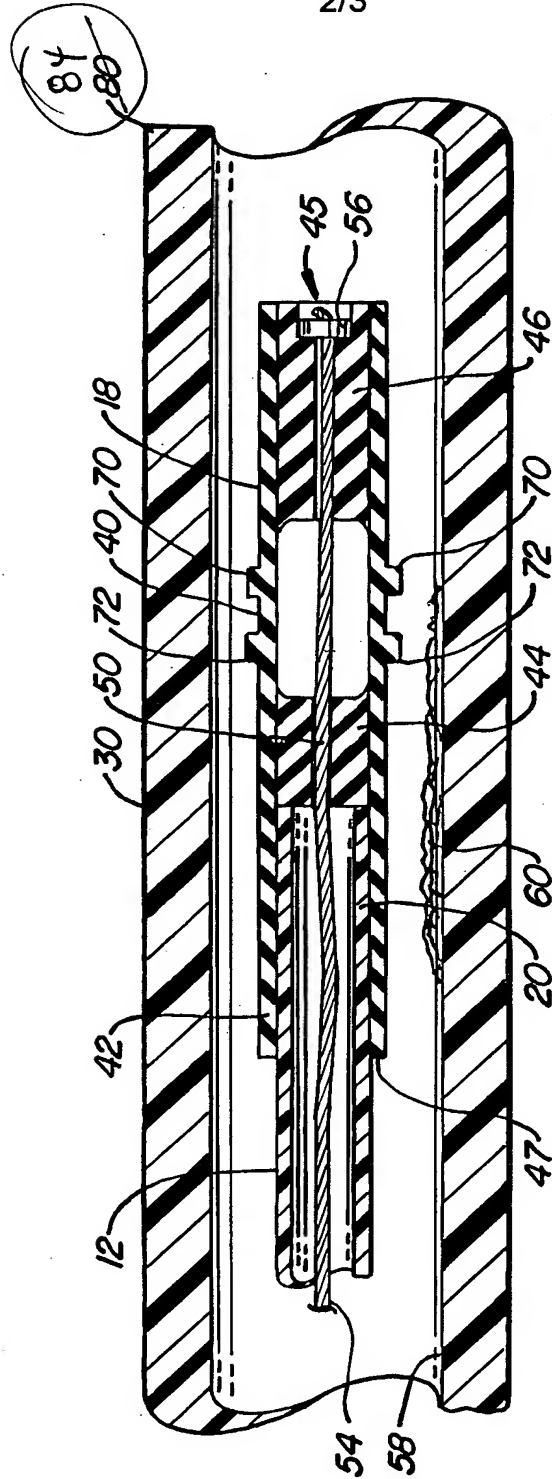


FIG. 2



**FIG. 3**

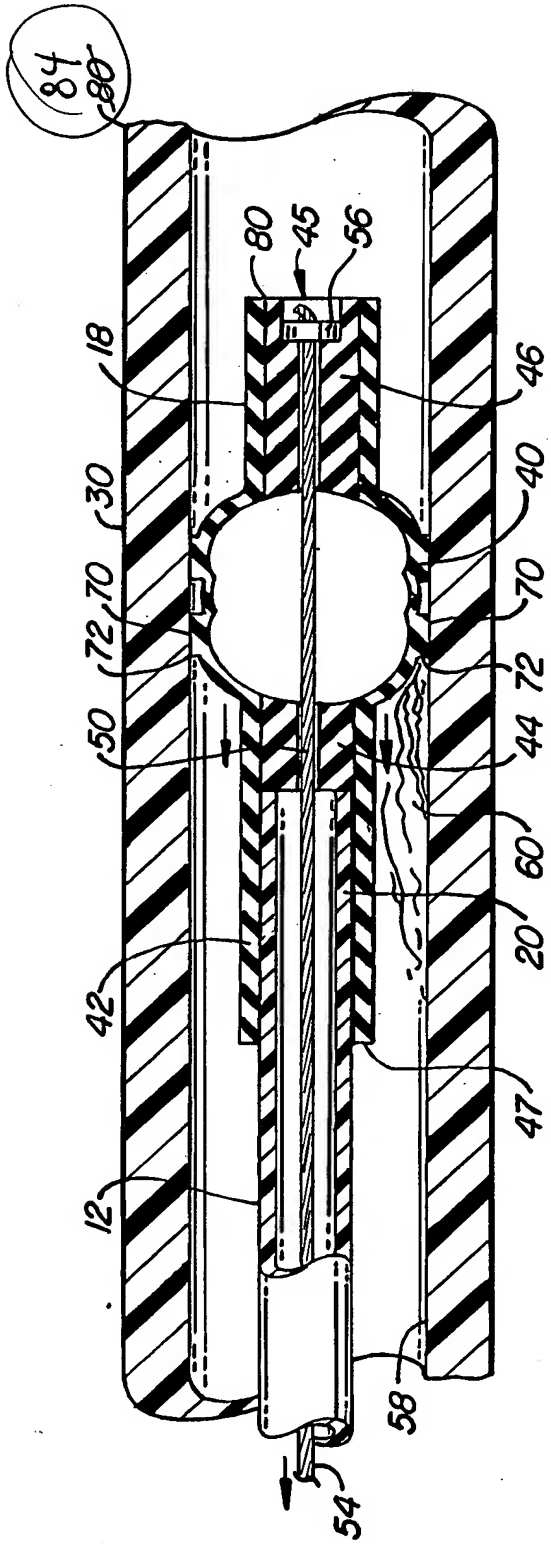


FIG. 4